

Petroleum and Your Community

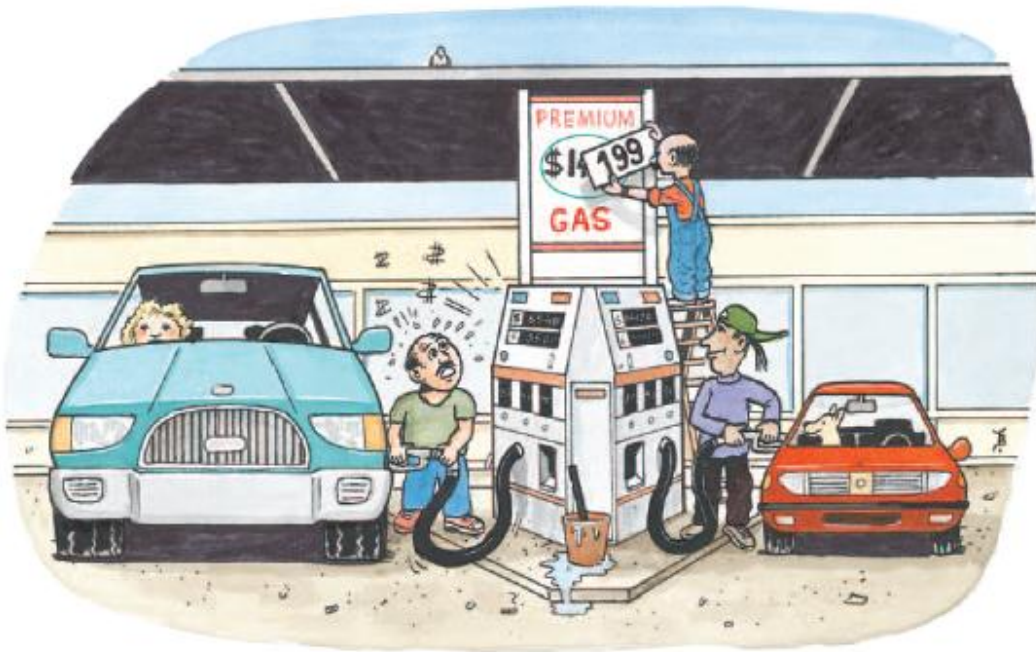
Think About It

Page R53

Date

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- What percentage of oil used every day in the United States is produced in the United States?
- Where are oil and natural gas found in the United States?



WHAT DO YOU THINK?

Activity 6

Investigate Part A

Pages R54-55

Date

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1a. Construct a graph of U.S. petroleum production, foreign petroleum imports and petroleum consumption. Predict the data for the next 20 years.

2a. Describe how U.S. production has changed during the 45-year period. About when did it peak?

2b. Describe how petroleum imports have changed during that period.

2c. Describe how total petroleum consumption has changed over the period.

2d. In what year did the U.S. begin to import more petroleum than it produced?

2e. What percentage of the total petroleum consumption was met by domestic production in 1954? In 1999?

Activity 6

Digging Deeper

Pages R58-60

Date

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Petroleum (crude oil)

a thick, black liquid formed from the remains of buried marine organisms

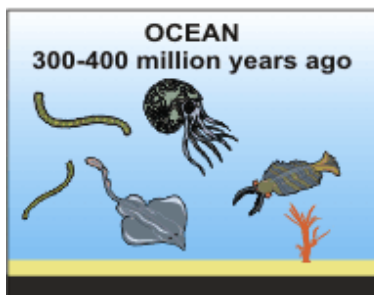
Natural gas

methane gas formed from the remains of marine organisms

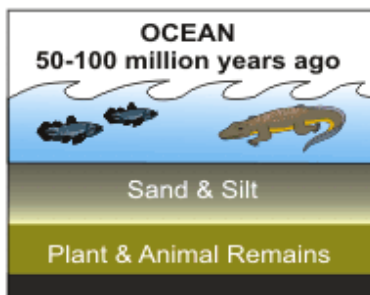
Natural gas and petroleum are often found in sediments or sedimentary layers

As layers of sediments cover the remains, the pressure and temperature increase, causing some of the organic matter to be changed into oil and gas

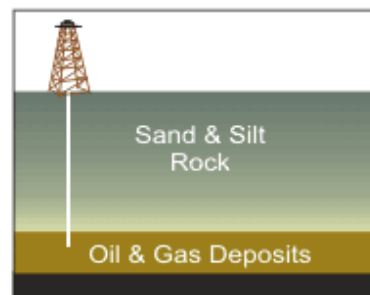
PETROLEUM & NATURAL GAS FORMATION



Tiny sea plants and animals died and were buried on the ocean floor. Over time, they were covered by layers of silt and sand.



Over millions of years, the remains were buried deeper and deeper. The enormous heat and pressure turned them into oil and gas.



Today, we drill down through layers of sand, silt, and rock to reach the rock formations that contain oil and gas deposits.

http://www.hk-phy.org/energy/power/source_phy/flash/formation_e.html

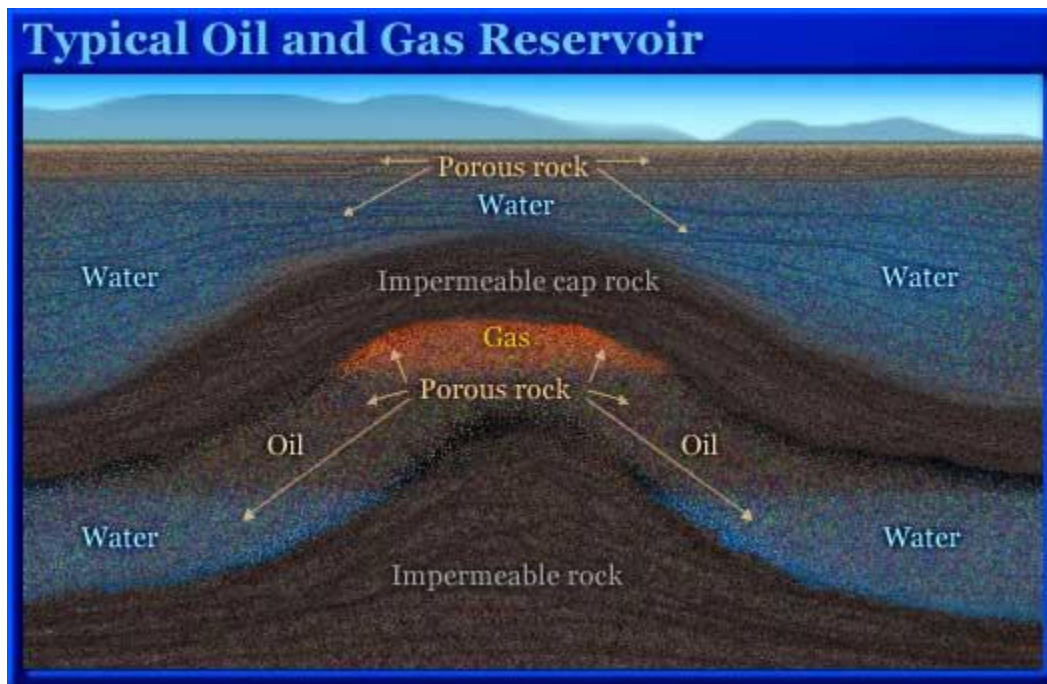
Petroleum, natural gas and coal are examples of nonrenewable energy sources

Nonrenewable resource

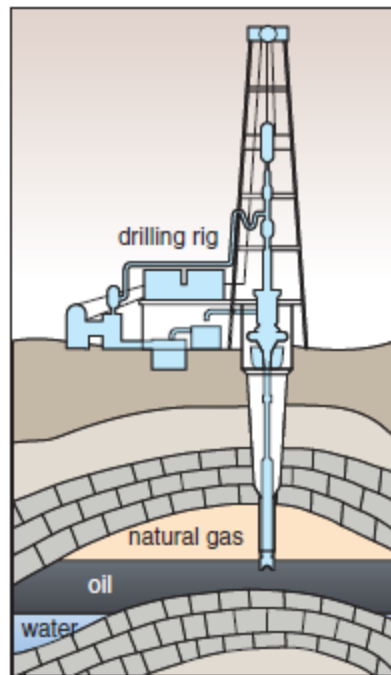
an energy source that is used faster than it can be replaced

Reservoir

a large body of sedimentary rock that contains petroleum and/or natural gas



The oil and gas can be brought to the surface by drilling deep wells into the reservoir



Nonrenewable

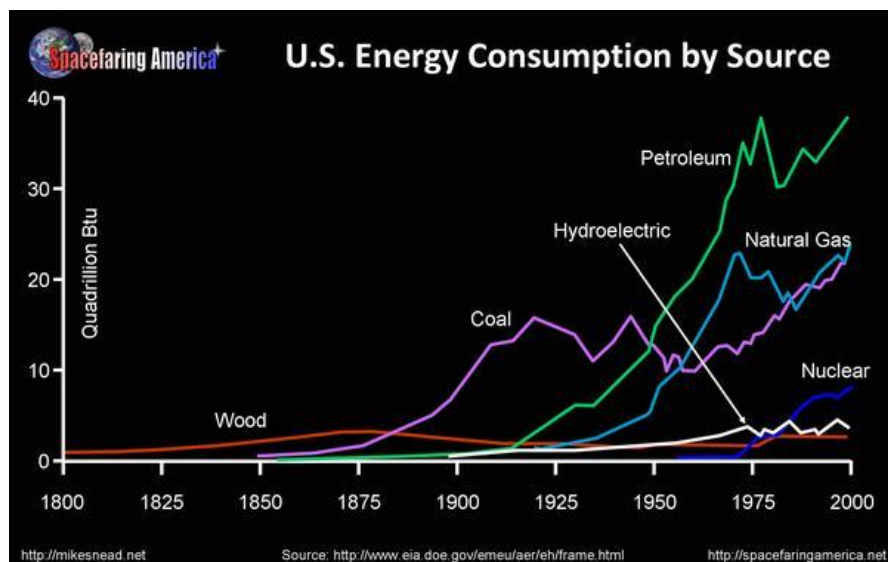
oil and gas are considered nonrenewable because they are used up much faster than they can be replaced

Useful fuels

oil and gas are useful fuels for several reasons:

1. they have a very high heat content per weight
2. they cost less than coal to transport and are fairly easy to transport
3. they can be refined easily to form many kinds of useful materials

U.S. energy use has skyrocketed



U.S. oil production

in 1920, the United States produced 2/3 of the world's oil

By 1998, the U.S. supplied only 12% of the world's oil

Some people estimate that the U.S. has less than 35% of its original oil remaining

Activity 6

Check Your Understanding

Date

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1. How do oil and natural gas form?

2. Why do some people refer to the present times as the “petroleum age?”

3. What are the advantages of petroleum and natural gas as fuels?

4. Why are oil and gas considered nonrenewable resources?